UNITED NATIONS

EP

UNEP/OzL.Pro.WG.1/40/3

Distr.: General
6 April 2018

Original: English

United Nations Environment Programme

Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer
Fortieth meeting
Vienna, 11–14 July 2018
Item 3 (a) of the provisional agenda*
Kigali Amendment to the Montreal Protocol to phase down hydrofluorocarbons: data reporting under Article 7 and related issues

Data reporting under Article 7 of the Montreal Protocol, including related issues arising from the Kigali Amendment to the Montreal Protocol to phase down hydrofluorocarbons

Note by the Secretariat

I. Introduction

1. The present note sets out a summary of issues related to data reporting of hydrofluorocarbons (HFCs) under Article 7 of the Montreal Protocol on Substances that Deplete the Ozone Layer. The issues were initially discussed by the Open-ended Working Group of the Parties to the Montreal Protocol at its thirty-ninth meeting[1] and further considered at the Twenty-Ninth Meeting of the Parties.[2] Most of those discussions took place in a contact group that was set up at the thirty-ninth meeting of the Open-ended Working Group and reconvened at the Twenty-Ninth Meeting of the Parties, to address data reporting and related issues, including the following:

(a) Timeline for reporting of baseline data for HFCs by parties operating under paragraph 1 of Article 5 of the Protocol (Article 5 parties);

(b) Trade with non-parties and associated reporting;

(c) Global-warming-potential values for HCFC-141 and HCFC-142;

(d) Process for approving destruction technologies for HFCs;

(e) Revised data reporting forms and associated instructions, including the reporting of mixtures and blends.

* UNEP/OzL.Pro.WG.1/40/1.

[1] See UNEP/OzL.Pro.WG.1/39/2 and UNEP/OzL.Pro.WG.1/39/3, available from http://conf.montreal-protocol.org/meeting/oewg/oewg-39/presession/, and the report of the meeting (UNEP/OzL.Pro.WG.1/39/5), available from http://conf.montreal-protocol.org/meeting/oewg/oewg-39/report/.

[2] See UNEP/OzL.Pro.29/7, available from http://conf.montreal-protocol.org/meeting/mop/cop11-mop29/presession/, and the report of the meeting (UNEP/OzL.Conv.11/7-UNEP/OzL.Pro.29/8), available from http://conf.montreal-protocol.org/meeting/mop/cop11-mop29/report/.

2. Section II of the present note provides a summary of the discussions on the issues that were addressed and concluded, namely destruction technologies for HFCs, listed in paragraph 1 above as item (d), and trade with non-parties and associated reporting, listed in paragraph 1 above as item (b).

3. Section III of the present note provides the status of discussions on issues that still require further discussion, listed in paragraph 1 above as items (a), (c), and (e).

4. Section IV of the present note provides information on the development by the Secretariat of an online reporting tool for use by parties to submit their annual Article 7 data reports.

5. Annex I to the present note provides a draft text from the co-chairs of the contact group on the timeline for reporting of baseline data for HFCs by Article 5 parties for the consideration of the parties (see paragraph 14).

6. Annex II to the present note contains the proposed Article 7 data reporting forms (questionnaire and data forms 1 to 6, on imports, exports, production, destruction, non-party trade and emissions of controlled substances). Appendix I to annex II to the present note sets out the associated instructions and guidelines for data reporting; appendix II sets out information associated with reporting other than Article 7 reporting; and appendix III sets out information on reporting under the exemption for high-ambient-temperature parties (instructions and data forms 7 and 8 on consumption and production). In more detail, the appendices are structured as follows:

(a) Appendix I: Data reporting instructions and guidelines, split into sections as follows:

(i) Section 1: Introduction;

(ii) Section 2: Reporting of data and clarifications associated with Article 7 of the Montreal Protocol;

(iii) Section 3: General instructions;

(iv) Section 4: Definitions;

(v) Section 5: Instruction I on data on imports of controlled substances (data form 1);

(vi) Section 6: Instruction II on data on exports of controlled substances (data form 2);

(vii) Section 7: Instruction III on data on production of controlled substances (data form 3);

(viii) Section 8: Instruction IV on data on destruction of controlled substances (data form 4);

(ix) Section 9: Instruction V on data on imports from and exports to non-parties (data form 5);

(x) Section 10: Instruction VI on data on emissions of Annex F, Group II substance – HFC-23 (data form 6);

(xi) Section 11: Illustrative list of mixtures containing controlled substances;

(b) Appendix II: Reporting provisions and clarifications associated with reporting of information other than Article 7 reporting;

(c) Appendix III: Reporting on consumption and production under the exemption for high-ambient-temperature parties. The appendix includes the following sections:

(i) Section 1: Instruction VII on data on consumption (imports) under the exemption for high-ambient-temperature parties (data form 7);

(ii) Section 2: Instruction VIII on data on production under the exemption for high-ambient-temperature parties (data form 8).

7. After the co-chairs presented their report on the outcome of the contact group deliberations to the Twenty-Ninth Meeting of the Parties, the parties agreed that data reporting issues would be included in the agenda of the fortieth meeting of the Open-ended Working Group and that the Working Group would decide how best to proceed thereafter.

II. Issues addressed and concluded

A. Process for approving destruction technologies for HFCs

8. The discussions in the contact group at the Twenty-Ninth Meeting of the Parties resulted in the adoption of decision XXIX/4. The information on progress in the implementation of decision XXIX/4 is contained in document UNEP/OzL.Pro.WG.1/40/2.

B. Trade with non-parties and associated reporting

9. During the discussion in the contact group at the Twenty-Ninth Meeting of the Parties, there was general agreement that for HFCs, the issue of trade with non-parties would only apply from 1 January 2033 onwards, and hence there was no need to report under Article 7 on trade with non-parties before that date. It was agreed that HFCs would be excluded from the requirement to report on trade with non-parties, and consequently that all references to Annex F substances (HFCs) should be deleted from the data reporting forms, and appropriate text should be included therein to guide the parties and the Secretariat accordingly. The deletion has been effected in data form 5, set out in annex II to the present note, and in the associated instructions V, set out in section 9 of appendix I to annex II to the present note (see section III, subsection C below).

III. Issues for further consideration by the parties

A. Timeline for reporting of baseline data for HFCs by parties operating under paragraph 1 of Article 5 (Article 5 parties)

10. Following the adoption of the Kigali Amendment, paragraph 2 of Article 7 of the Protocol requires that each party operating under paragraph 1 of Article 5 (Article 5 party) provide to the Secretariat statistical data on its production, imports and exports of controlled substances in Annex F for the baseline years (2020–2022 for group 1 parties[3] and 2024–2026 for group 2 parties[4]), or best estimates of such data where actual data are not available, not later than three months after the date when the provisions set out in the Protocol with regard to those substances enter into force for that party.

11. Based on that paragraph, Article 5 parties that have ratified the Kigali Amendment, and those that ratify the amendment before the end of 2022 for group 1 parties and before the end of 2026 for group 2 parties, could be required to report some or all of their respective baseline data before the data actually become available. As at the date of the present note, several Article 5 parties have already ratified the Kigali Amendment, which will enter into force on 1 January 2019.

12. During the discussions that took place in the contact group at the Twenty-Ninth Meeting of the Parties, there was general agreement that Article 5 parties that ratify the Kigali Amendment early should report their baseline data within six or nine months after each relevant baseline year, and a proposal was made to allow reporting of the baseline data at the end of the baseline period.[5]

13. A suggestion that had been made previously was reiterated, namely to include a compliance deferral text in the decision on this issue, which would prevent the delayed reporting of the baseline data resulting in non-compliance with the Protocol in respect of data reporting. Reference was made to decision XV/12, which provided compliance deferral for countries that used over 80 per cent of their consumption of methyl bromide on high-moisture dates until alternatives had become available. Similar reference was made to paragraph 36 of decision XXVIII/2,[6] which provides for a deferral in respect of high-ambient-temperature countries. One party indicated however that if the decision text could be clear on the reporting requirements, there might not be a need for deferral.

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[3] All Article 5 parties except for the 10 parties listed in footnote 4 to the present note.

[4] Bahrain, India, Iran (Islamic Republic of), Iraq, Kuwait, Oman, Pakistan, Qatar, Saudi Arabia and the United Arab Emirates.

[5] The Secretariat notes that under paragraph 3 of Article 7 of the Protocol, parties that ratify the Protocol will be required to report annual data not later than nine months after the end of the year to which the data relate.

[6] Paragraph 36 of decision XXVIII/2 states that "the Implementation Committee under the Non-Compliance Procedure of the Montreal Protocol and the Meeting of the Parties should, for 2025 and 2026, defer consideration of the hydrochlorofluorocarbon compliance status of any party operating under a high-ambient-temperature exemption in cases where it has exceeded its allowable consumption or production levels due to its HCFC-22 consumption or production for the sub-sectors listed in appendix I to the present decision, on the condition that the party concerned is following the phase-out schedule for consumption and production of hydrochlorofluorocarbons for other sectors and has formally requested a deferral through the Secretariat".

14. The contact group concluded that there was general agreement on the concept of allowing Article 5 parties that ratify early to report their HFC baseline data at a later date than that specified in paragraph 2 of the Protocol. Subsequently, the co-chairs were tasked with preparing some text capturing the key points and options to be considered by the parties through a decision. A draft text from the co-chairs for the consideration of the parties is outlined in annex I to the present note.

B. Global-warming-potential values for HCFC-141 and HCFC-142

15. The Kigali Amendment introduced global-warming-potential (GWP) values for 8 of the 40 HCFCs listed in Annex C of the Protocol. A provision was included in Annex C stating that for substances for which no GWP value is indicated, the default value zero applies until a GWP value is determined by means of the procedure foreseen in paragraph 9 (a) (ii) of Article 2 of the Protocol.[7]

16. The Secretariat reported to the Twenty-Ninth Meeting of the Parties[8] that it had reviewed the data submissions for 1989 for a few of the 10 parties[9] whose baseline data included HCFC-141 and HCFC-142, namely Canada, the European Union, France, Japan and Sweden. Based on that review, the Secretariat confirmed that those parties had reported HCFC data for 1989 before the Fifth Meeting of the Parties in 1993, and they had used data reporting forms adopted in 1991 by the Third Meeting of the Parties. Those forms did not list HCFC-141b and HCFC-142b in the list of substances to be reported, and therefore those parties could only report HCFC-141 and HCFC-142 respectively. The Secretariat therefore deemed it likely that the data on HCFC-141 and HCFC-142 reported by those parties for 1989 pertained to the most commercially viable isomers of those substances, namely HCFC-141b and HCFC-142b, for which GWP values are assigned.

17. During the discussions in the contact group, one of the parties affected by the issue pointed out that it had only used HCFC-141b and HCFC-142b in the past, hence the inaccuracies in the reporting and recording of HCFC-141 and HCFC-142 were due to the limitations of the forms available at the time. It was suggested that the parties affected would not request changes to their past baseline, but instead the quantities reported as HCFC-141 and HCFC-142 would be considered as HCFC-141b and HCFC-142b respectively for the purpose of calculating HFC baselines.

18. There was a request for clarification on the difference between this situation and that of parties requesting baseline data changes that are usually considered by the Implementation Committee prior to approval. The president of the Implementation Committee explained that the latter related to situations in which the reported data was incorrect and needed correction, while the situation under consideration related to data correctly reported but incorrectly recorded as a result of the limitations of the reporting forms.

19. It was agreed in the contact group that parties would engage in bilateral consultations on the matter. The contact group also agreed that the matter did not require a decision and that a clarification within a meeting report should suffice.

20. During the discussions, one party raised a separate issue by pointing out that there had been errors in the global-warming-potential values of the common isomers of HCFC-123 and HCFC-124, which had been transposed incorrectly in the Kigali Amendment. The party stated that the parties would provide guidance to the Secretariat on the matter.

C. Revised data reporting forms and associated instructions, including the reporting of mixtures and blends

21. The need to review and update the data reporting forms, including the associated instructions and guidelines, arose following the adoption of the Kigali Amendment, which introduced new reporting obligations in relation to HFCs.

22. The Secretariat had prepared an initial set of revised data reporting forms, as well as an updated version of the associated instructions and guidelines, for consideration by the Open-ended Working Group at its thirty-ninth meeting. The contact group on data reporting and related issues considered the proposed forms, and various suggestions were made for improvements. Parties provided the

[7] Paragraph 9 (a) (ii) of Article 2 of the Montreal Protocol states that "based on the assessments made pursuant to Article 6, the Parties may decide whether adjustments to the global warming potentials specified in Group 1 of Annex A, Annex C and Annex F should be made and, if so, what the adjustments should be."

[8] UNEP/OzL.Pro.29/7, available from http://conf.montreal-protocol.org/meeting/mop/cop11-mop29/presession/.

[9] The 10 parties are Canada, European Union, France, Japan, Malaysia, Norway, the Russian Federation, Sweden, Switzerland and Ukraine.

Secretariat with additional and more comprehensive comments both in writing and orally after that meeting.

23. The Secretariat subsequently made revisions to the reporting forms and the associated instructions and guidelines based on the feedback and input received from the parties, and presented the revised forms for consideration by the Twenty-Ninth Meeting of the Parties. Discussions took place mostly in the contact group, where various issues were considered.

1. Reporting of blends

24. The issue of allowing the reporting of blends was generally accepted, even though some parties indicated that they preferred to report pure substances. Some parties indicated that they were comfortable with the new proposed revised data reporting forms because they allowed flexibility. Several parties requested that the forms for reporting country programme data needed to similarly allow the reporting of blends, and the Secretariat of the Multilateral Fund for the Implementation of the Montreal Protocol indicated that they would revise the country programme reporting forms based on what parties had agreed. Some parties requested that tools be developed to automatically manage the reporting of blends. Those tools are under preparation.

2. Harmonized System codes for HFC-blends

25. On the issue of Harmonized System (HS) codes for HFC blends, it was reported that an application had been made to the World Customs Organization to consider assigning HS codes for the most commonly traded HFC blends and mixtures. The Harmonized System Committee of the World Customs Organization considered the issue at its meeting held in Brussels on 9 March 2018, but was unable to conclude its discussion on the classification of HFC mixtures owing to concerns that the proposed structure of the new HS codes did not properly harmonize the products proposed in the subheadings under Chapter 38 of the HS nomenclature. The Committee referred the matter to the Harmonized System Review Subcommittee, which will meet in Brussels in June 2019 to deliberate on the issue. The Secretariat will provide an update to the Meeting of the Parties on the outcome of the deliberations of the Subcommittee.

3. Reporting on HFC-23 emissions

26. On the issue of reporting on HFC-23 emissions,[10] one party requested that the whole of form 6 on reporting of HFC-23 emissions be put in square brackets, arguing that emissions were to be reported to the United Nations Framework Convention on Climate Change. There was also discussion on whether optional reporting, currently included in the proposed data reporting forms (relevant columns are shaded light grey in forms 1, 2, 5 and 6), needed to be deleted or separated from the mandatory reporting requirements.

4. Reporting of HFC-23 by-production

27. On the issue of reporting on HFC-23 by-production, it was clarified that any by-production that was captured needed to be reported on data form 3 on production, as had been done in a similar way in the past for the reporting of by-production of carbon tetrachloride. Data forms 3 and 6 and their associated instructions in sections 7 and 10 respectively of appendix I to annex II to the present report have been revised accordingly.

5. Reporting information on trade with non-parties

28. With respect to reporting information on non-party trade, it was agreed that all references to annex F substances (HFCs) in data form 5, set out in annex II to the present note, and the associated instructions set out in section 9 of appendix I to annex II to the present note (see section I above) would be deleted.

6. Conclusion

29. The contact group agreed that more time was required to consider the data reporting forms and their associated instructions and guidelines before finalization.

[10] Paragraph 3 ter of Article 7 of the Montreal Protocol as amended by the Kigali Amendment states that "each Party shall provide to the Secretariat statistical data on its annual emissions of Annex F, Group II, controlled substances per facility in accordance with paragraph 1 (d) of Article 3 of the Protocol".

IV. Development of an online reporting tool for Article 7 data

30. The Secretariat has been working on the development of an online reporting tool for use by parties to submit their annual Article 7 data reports. Although initial preparatory work and development of the tool has been undertaken, the Secretariat has decided to include in the online tool the revised data forms that are expected to be approved by the parties. Once those forms are approved, the Secretariat will be able to complete the work on reporting.

Annex I

Timelines for reporting of baseline data for HFCs by parties operating under paragraph 1 of Article 5 (Article 5 parties)

Draft text from the co-chairs of the contact group

Points to consider

(i) Regarding the reporting of baseline data for the HFC phase-down, paragraph 2 of Article 7 as amended by the Kigali Amendment includes provisions requiring each party to report statistical data on production, imports and exports of each HFC listed in Annex F for the relevant years as follows:

- 2011 to 2013 for parties not operating under paragraph 1 of Article 5;
- 2020 to 2022 for Article 5, group 1 parties;[1]
- 2024 to 2026 for Article 5, group 2 parties;[2]

or the best possible estimates where actual data are not available, **not later than three months after the date when the provisions set out in the Montreal Protocol with regard to the substances in Annex F enter into force for that party (emphasis added).**

(ii) The data reported for the years specified above contribute to the calculation of baselines for complying with the HFC phase-down.

(iii) Compliance with paragraph 2 of Article 7 would require Article 5 parties that ratify the Kigali Amendment before the end of 2022 for group 1 parties and before the end of 2026 for group 2 parties to report estimates of some or all of their respective baseline data for hydrofluorocarbons before the actual data become available.

(iv) Parties that submit best possible estimates of their consumption and production for each baseline year in advance of the baseline years, and that subsequently want to change that data once data on actual consumption becomes available, would need to have their requests considered by the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol and the Meeting of the Parties, as required by paragraph 5 of decision XIII/15. It would be advisable to avoid such a situation as much as possible.

(v) There is general agreement that it would be more pragmatic and practical for Article 5 parties to provide actual baseline data rather than provide uncertain and imprecise data projections some years in advance of their respective baseline years. Therefore, it would be desirable that parties clarify when and how Article 5 parties should report actual baseline data for hydrofluorocarbons instead of reporting estimated data for future years.

(vi) This approach would apply only to those Article 5 parties for which the Amendment enters into force before the end of the applicable baseline year or period.

(vii) In considering this issue, it is important for parties to recall that annual reporting of HFC data for the baseline years would still take place as part of the mandatory reporting under paragraph 3 of Article 7 of the Montreal Protocol as amended by the Kigali Amendment. That paragraph stipulates that each party is required to report annual data for hydrofluorocarbons for the year during which the amendment enters into force for that party and for each year thereafter, not later than nine months after the end of the year to which the data relate.

Proposed approach

Proposed option 1

In order to allow Article 5 parties to report actual HFC baseline data, the Implementation Committee and Meeting of the Parties should defer, separately for each baseline year, the consideration of the compliance status, relative to reporting of hydrofluorocarbons under paragraph 2 of Article 7, of any

[1] All Article 5 parties except for the 10 parties listed in footnote 2.

[2] Bahrain, India, Iran (Islamic Republic of), Iraq, Kuwait, Oman, Pakistan, Qatar, Saudi Arabia and the United Arab Emirates.

Article 5 party for which the Kigali Amendment enters into force before the end of the applicable baseline period, until:

(a) [Six][Nine] months after the end of each of the baseline years to which the data relate (i.e., June or September of 2021, 2022 and 2023 for group 1; and June or September of 2025, 2026 and 2027 for group 2); or

(b) [Six][Nine] months after the end of the year during which the Kigali Amendment enters into force for that party (e.g., a party for which the Amendment enters into force in 2021 would have to report baseline data for the baseline years 2020 and 2021 by June or September of 2022 and would have to report baseline data for 2022 by June or September 2023).

Note: This would mean that an Article 5 party that submits its complete data for each baseline year as per the above dates would benefit from a compliance deferral. This deferral does not apply to the reporting obligations under paragraph 3 of Article 7 of the Protocol.

Proposed option 2

In order to allow Article 5 parties to report actual HFC baseline data, the Implementation Committee and Meeting of the Parties should defer the consideration of the compliance status, relative to reporting of hydrofluorocarbons under paragraph 2 of Article 7, of any Article 5 party for which the Kigali Amendment enters into force before the end of the applicable baseline period, until [six][nine] months after the final year of the baseline period (i.e., June or September of 2023 for group 1 and June or September of 2027 for group 2).

Note: This would mean that an Article 5 party that submits its complete data for each baseline year as per the above dates would benefit from a compliance deferral. This deferral does not apply to the reporting obligations under paragraph 3 of Article 7 of the Protocol.

Annex II

Proposed Article 7 data reporting forms and associated instructions and guidelines

Questionnaire

Party:_____ Reporting year:_____

Before beginning the questionnaire, respondents are requested to read the following sections of the data reporting instructions and guidelines document carefully: (a) Section 1: Introduction; (b) Section 3: General instructions; and (c) Section 4: Definitions. Respondents are encouraged to refer to the data reporting instructions and guidelines as necessary when completing the data forms.

Questionnaire

1.1. Did your country **import** CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs in the reporting year?

Yes [ ] No [ ]

If No, ignore data form 1 and go to question 1.2. If Yes, please complete data form 1. Please read **instruction I** (on data on imports of controlled substances) of the data reporting instructions and guidelines document carefully before filling in the form.

1.2. Did your country **export or re-export** CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs in the reporting year?

Yes [ ] No [ ]

If No, ignore data form 2 and go to question 1.3. If Yes, please complete data form 2. Please read **instruction II** (on data on exports of controlled substances) of the data reporting instructions and guidelines document carefully before filling in the form.

1.3. Did your country **produce** CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs in the reporting year?

Yes [ ] No [ ]

If No, ignore data form 3 and go to question 1.4. If Yes, please complete data form 3. Please read **instruction III** (on data on production of controlled substances) of the data reporting instructions and guidelines document carefully before filling in the form.

1.4. Did your country **destroy** any ozone-depleting substances or HFCs in the reporting year?

Yes [ ] No [ ]

If No, ignore data form 4 and go to question 1.5. If Yes, please complete data form 4. Please read **instruction IV** (on data on destruction of controlled substances) of the data reporting instructions and guidelines document carefully before filling in the form.

1.5. Did your country **import from** or **export or re-export to non-parties** in the reporting year?

Yes [ ] No [ ]

If No, ignore data form 5 and go to question 1.6. If Yes, please complete data form 5. Please read **instruction V** (on data on imports from and exports to non-parties) of the data reporting instructions and guidelines document carefully, particularly the definition of non-parties, before filling in the form.

1.6. Did your country generate the substance HFC-23 in the reporting year from any facility that **produces (manufactures) Annex C Group I or Annex F substances**?

Yes [ ] No [ ]

If No, ignore data form 6. If Yes, please complete data form 6. Please read **instruction VI** (on data on emissions of Annex F Group II substance – HFC-23) of the data reporting instructions and guidelines document carefully before filling in the form.

Name of reporting officer: .....

Signature: .....

Designation: .....

Organization: .....

Postal address: .....

Country: .....

Phone: .....

Email: .....

Date: .....

Data form 1 on imports

1. Fill in this form only if your country imported CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs

2. Please read instruction I carefully before filling in this form.

Party: _____

DATA FORM 1

DATA ON IMPORTS

in tonnes[1] (not ODP or CO_2-equivalent tonnes)

Annex A, B, C, E and F substances

Period: January – December 20____

Dataform/2018

(1) Annex/group	*(2) Substance*	*Total quantity imported for all uses*		*(5) Quantity of new substance imported for feedstock uses*	*Quantity of new substance imported for exempted essential, critical or other uses**	
		(3) New	*(4) Recovered and reclaimed*		*(6) Quantity*	*(7) Decision / type of use* or remarks*
A-Group I	CFC-11 ($CFCl_3$)					
	CFC-12 (CF_2Cl_2)					
	CFC-113 ($C_2F_3Cl_3$)					
	CFC-114 ($C_2F_4Cl_2$)					
	CFC-115 (C_2F_5Cl)					
A-Group II	Halon-1211 (CF_2BrCl)					
	Halon-1301 (CF_3Br)					
	Halon-2402 ($C_2F_4Br_2$)					
B-Group I	CFC-13 (CF_3Cl)					
B-Group II	Carbon tetrachloride (CCl_4)					
B-Group III	Methyl chloroform, i.e., 1,1,1-trichloroethane ($C_2H_3Cl_3$)					

Comments:

[1] Tonne = Metric ton.

* Against each substance imported for exempted essential, critical or other uses, please specify the Meeting of the Parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

(1) *Annex/group*	*(2)* *Substance*	*Total quantity imported for all uses*		*(5)* *Quantity of new substance imported for feedstock uses*	*Quantity of new substance imported for exempted essential, critical or other uses**	
		(3) *New*	*(4)* *Recovered and reclaimed*		*(6)* *Quantity*	*(7)* *Decision / type of use* or remarks*
C-Group I	HCFC-21** ($CHFCl_2$)					
	HCFC-22** (CHF_2Cl)					
	HCFC-31 (CH_2FCl)					
	HCFC-123** ($CHCl_2CF_3$)					
	HCFC-124** ($CHFClCF_3$)					
	HCFC-133 ($C_2H_2F_3Cl$)					
	HCFC-141b** (CH_3CFCl_2)					
	HCFC-142b** (CH_3CF_2Cl)					
	HCFC-225 ($C_3HF_5Cl_2$)					
	HCFC-225ca ($CF_3CF_2CHCl_2$)					
	HCFC-225cb (CF_2ClCF_2CHClF)					
C-Group II	HBFCs					
C-Group III	Bromochloromethane (CH_2BrCl)					
E-Group I	Methyl bromide (CH_3Br)					
					Quantity of new methyl bromide imported to be used for quarantine and pre-shipment applications	

Comments:

Note: As per paragraph 5 bis of Article 2 of the Protocol, any transfer of HCFC consumption by parties not operating under paragraph 1 of Article 5 shall be notified to the Secretariat, no later than the time of the transfer, by each of the parties concerned, stating the terms of such transfer and the period for which it is to apply.

* Against each substance imported for exempted essential, critical or other uses, please specify the Meeting of the Parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

** Identifies the most commercially viable substances with ozone-depleting-potential (ODP) values listed against them to be used for the purposes of the Protocol.

(1) Annex/group	(2) Substance	Total quantity imported for all uses		(5) Quantity of new substance imported for feedstock uses	Quantity of new substance imported for exempted essential, critical or other uses*	
		(3) New	(4) Recovered and reclaimed		(6) Quantity	(7) Decision / type of use* or remarks
F-Group I	HFC-32 (CH_2F_2)					
	HFC-41 (CH_3F)					
	HFC-125 (CHF_2CF_3)					
	HFC-134 (CHF_2CHF_2)					
	HFC-134a (CH_2FCF_3)					
	HFC-143 (CH_2FCHF_2)					
	HFC-143a (CH_3CF_3)					
	HFC-152 (CH_2FCH_2F)					
	HFC-152a (CH_3CHF_2)					
	HFC-227ea (CF_3CHFCF_3)					
	HFC-236cb ($CH_2FCF_2CF_3$)					
	HFC-236ea (CHF_2CHFCF_3)					
	HFC-236fa ($CF_3CH_2CF_3$)					
	HFC-245ca ($CH_2FCF_2CHF_2$)					
	HFC-245fa ($CHF_2CH_2CF_3$)					
	HFC-365mfc ($CF_3CH_2CF_2CH_3$)					
	HFC-43-10mee ($CF_3CHFCHFCF_2CF_3$)					
F-Group II	HFC-23 (CHF_3)					
Mixtures and blends containing any controlled substance(s) – applicable to all substances, not just HFCs (add additional rows or pages as required for blends not listed below)						
R-404A (HFC-125 = 44%, HFC-134a = 4%, HFC-143a = 52%)						
R-407A (HFC-32 = 20%, HFC-125 = 40%, HFC-143a = 40%)						
R-407C (HFC-32 = 23%, HFC-125 = 25%, HFC-143a = 52%)						
R-410A (HFC-32 = 50%, HFC-125 = 50%)						
R-507A (HFC-125 = 50%, HFC-143a = 50%)						
R-508B (HFC-23 = 46%, PFC-116 = 54%)						

Comments:

Note: When reporting blends, reporting of controlled substances should not be duplicated. Parties may choose to report imports of individual controlled substances, total quantities of blends imported, or a combination of both, provided that the amounts of imported controlled substances are not reported more than once. If a non-standard blend not listed in section 11 of the data reporting instructions and guidelines is to be reported, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported in the "remark" column or in the "comments" box above.

* Against each substance imported for exempted essential, critical, high-ambient-temperature or other uses, please specify the Meeting of the Parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above. In case of multiple exemptions per substance for some of the controlled substances, multiple entries may be used for those substances to report on those exemptions.

Annex to DATA FORM 1 - Exporting parties for quantities reported as imports **Dataform/2018**

Note: This annex is excluded from the reporting requirements under Article 7 of the Protocol, and the information in the annex is to be provided on a voluntary basis (decision XXIV/12)

(1) Substance	*(2) Exporting party for quantities reported as imports*	*Total quantity imported for all uses*		*(5) Quantity of new substance imported for feedstock uses*	*Quantity of new substance imported for exempted essential, critical, high-ambient-temperature or other uses**	
		(3) New	*(4) Recovered and reclaimed*		*(6) Quantity*	*(7) Decision / type of use* or remarks*
Methyl bromide (CH_3Br)						
					Quantity of new methyl bromide imported to be used for quarantine and pre-shipment applications within your country	

Comments:

* Against each substance imported for exempted essential, critical, high-ambient-temperature or other uses, please specify the Meeting of the Parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

Data form 2 on exports

1. Fill in this form only if your country exported or re-exported CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs

2. Please read instruction II carefully before filling in this form.

DATA FORM 2 **Dataform/2018**

DATA ON EXPORTS*

in tonnes[1] (not ODP or CO_2-equivalent tonnes)

Annex A, B, C, E and F substances

Party: _____ Period: January – December 20____

(1) Substance	*(2) Country of destination of exports***	*Total quantity exported for all uses*		*(5) Quantity of new substance exported for feedstock****	*Quantity of new substance exported for exempted essential, critical, high-ambient-temperature or other uses*****	
		(3) New	*(4) Recovered and reclaimed*		*(6) Quantity*	*(7) Decision / type of use***** or remarks*
Methyl bromide (CH_3Br)					*Quantity of new methyl bromide exported to be used for quarantine and pre-shipment applications*	
Comments:						

[1] Tonne = Metric ton.

Note: If a non-standard blend not listed in section 11 of the data reporting instructions and guidelines is to be reported, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported in the "remark" column or in the "comments" box above.

* Includes re-exports. Ref. decisions IV/14 and XVII/16, paragraph 4.

** Applicable to all substances, including those contained in mixtures and blends.

*** Do not deduct from total production in column 3 of data form 3 (data on production).

**** Against each substance exported for exempted essential, critical, high-ambient-temperature or other uses, please specify the Meeting of the Parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

Data form 3 on production

1. Fill in this form only if your country produced CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs

2. Please read instruction III carefully before filling in this form

Party: _____

DATA FORM 3 **Dataform/2018**

DATA ON PRODUCTION

in tonnes[1] (not ODP or CO_2-equivalent tonnes)

Annex A, B, C, E and F substances

Period: January – December 20____

(1) Annex/group	*(2) Substance*	*(3) Total production for all uses*	*(4) Production for feedstock uses within your country*	*Production for exempted essential, critical or other uses within your country**		*(7) Production for supply to Article 5 countries in accordance with Articles 2A-2H and 5*
				(5) Quantity	*(6) Decision / type of use* or remarks*	
A-Group I	CFC-11 ($CFCl_3$)					This column is no longer applicable to Annex A and B substances (CFCs, halons, CCl_4 and methyl chloroform)
	CFC-12 (CF_2Cl_2)					
	CFC-113 ($C_2F_3Cl_3$)					
	CFC-114 ($C_2F_4Cl_2$)					
	CFC-115 (C_2F_5Cl)					
A-Group II	Halon-1211 (CF_2BrCl)					
	Halon-1301 (CF_3Br)					
	Halon-2402 ($C_2F_4Br_2$)					
B-Group I	CFC-13 (CF_3Cl)					
B-Group II	Carbon tetrachloride (CCl_4)					
B-Group III	Methyl chloroform, i.e., 1,1,1-trichloroethane ($C_2H_3Cl_3$)					

Comments:

[1] Tonne = Metric ton.

Note: As per paragraph 5 of Article 2 of the Protocol, any transfer of production shall be notified to the Secretariat, no later than the time of the transfer, by each of the parties concerned, stating the terms of such transfer and the period for which it is to apply. By-production that is captured, whether for destruction, feedstock or any other use, shall be reported as production in this data form. Production that is converted to other substances shall be reported as production for feedstock uses in this data form.

* Against each substance produced for exempted essential, critical or other uses, please specify the Meeting of the Parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

(1) Annex/group	(2) Substance	(3) Total production for all uses	(4) Production for feedstock uses within your country	Production for exempted essential, critical or other uses within your country*		(7) Production for supply to Article 5 countries in accordance with Articles 2A-2H and 5
				(5) Quantity	(6) Decision / type of use* or remarks	
C-Group I	HCFC-21** ($CHFCl_2$)					
	HCFC-22** (CHF_2Cl)					
	HCFC-31 (CH_2FCl)					
	HCFC-123** ($CHCl_2CF_3$)					
	HCFC-124** ($CHFClCF_3$)					
	HCFC-133 ($C_2H_2F_3Cl$)					
	HCFC-141b** (CH_3CFCl_2)					
	HCFC-142b** (CH_3CF_2Cl)					
	HCFC-225 ($C_3HF_5Cl_2$)					
	HCFC-225ca ($CF_3CF_2CHCl_2$)					
	HCFC-225cb (CF_2ClCF_2CHClF)					
C-Group II	HBFCs					This column is no longer applicable to Annex/group C/II, C/III and E/I substances (HBFCs, BCM and methyl bromide)
C-Group III	Bromochloromethane (CH_2BrCl)					
E-Group I	Methyl bromide (CH_3Br)			*Total quantity of new methyl bromide produced for quarantine and pre-shipment applications within your country and for export*		

Comments:

Note: As per paragraph 5 of Article 2 of the Protocol, any transfer of production shall be notified to the Secretariat, no later than the time of the transfer, by each of the parties concerned, stating the terms of such transfer and the period for which it is to apply.

* Against each substance produced for exempted essential, critical or other uses, please specify the Meeting of the Parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above. By-production that is captured, whether for destruction, feedstock or any other use, shall be reported as production in this data form. Production that is converted to other substances shall be reported as production for feedstock uses in this data form.

** Identifies the most commercially viable substances with ozone-depleting-potential (ODP) values listed against them to be used for the purposes of the Protocol.

(1) Annex/group	*(2) Substance*	*(3) Total production for all uses*	*(4) Production for feedstock uses within your country*	*Production for exempted essential, critical or other uses within your country**		*(7) Production for supply to Article 5 countries in accordance with Articles 2A-2H and 5*
				(5) Quantity	*(6) Decision / type of use* or remarks*	
F-Group I	HFC-32 (CH_2F_2)					**This column is not applicable to Annex F substances (HFCs)**
	HFC-41 (CH_3F)					
	HFC-125 (CHF_2CF_3)					
	HFC-134 (CHF_2CHF_2)					
	HFC-134a (CH_2FCF_3)					
	HFC-143 (CH_2FCHF_2)					
	HFC-143a (CH_3CF_3)					
	HFC-152 (CH_2FCH_2F)					
	HFC-152a (CH_3CHF_2)					
	HFC-227ea (CF_3CHFCF_3)					
	HFC-236cb ($CH_2FCF_2CF_3$)					
	HFC-236ea (CHF_2CHFCF_3)					
	HFC-236fa ($CF_3CH_2CF_3$)					
	HFC-245ca ($CH_2FCF_2CHF_2$)					
	HFC-245fa ($CHF_2CH_2CF_3$)					
	HFC-365mfc ($CF_3CH_2CF_2CH_3$)					
	HFC-43-10mee ($CF_3CHFCHFCF_2CF_3$)					
F-Group II	HFC-23 (CHF_3)					

Comments:

Note: As per paragraph 5 of Article 2 of the Protocol, any transfer of production shall be notified to the Secretariat, no later than the time of the transfer, by each of the parties concerned, stating the terms of such transfer and the period for which it is to apply. By-production that is captured, whether for destruction, feedstock or any other use, shall be reported as production in this data form. Production that is converted to other substances shall be reported as production for feedstock uses in this data form.

* Against each substance produced for exempted essential, critical, high-ambient-temperature or other uses, please specify the Meeting of the Parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

Data form 4 on destruction of controlled substances

1. Fill in this form only if your country destroyed CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs

2. Please read instruction IV carefully before filling in this form

Party: _____

DATA FORM 4

DATA ON QUANTITY OF SUBSTANCES DESTROYED

in tonnes[1] (not ODP or CO_2-equivalent tonnes)

Annex A, B, C, E and F substances

Period: January – December 20____

Dataform/2018

(1) *Substance*	*(2)* *Quantity destroyed*	*(3)* *Remarks*

Comments:

[1] Tonne = Metric ton.

Note: If the composition of a destroyed mixture is known, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported in the remarks or comments section of the form or indicate a standard mixture or blend as listed in section 11 of the data reporting instructions and guidelines.

Data form 5 on trade with non-parties

1. Fill in this form only if your country imported or exported CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane or methyl bromide from or to non-parties

2. Please read instruction V carefully before filling in this form.

Party: _____

DATA FORM 5 **Dataform/2018**

DATA ON IMPORTS FROM AND/OR EXPORTS TO NON-PARTIES*

in tonnes[1] (not ODP or CO_2-equivalent tonnes)

Annex A, B, C and E substances

Period: January – December 20____

(1) *Substance*	*(2)* *Exporting party for quantities reported as imports* OR *Country of destination of exports*	*Quantity of imports from non-parties**		*Quantity of exports to non-parties**		*(7)* *Remarks*
		(3) *New imports*	*(4)* *Recovered and reclaimed imports*	*(5)* *New exports*	*(6)* *Recovered and reclaimed exports*	

Comments:

[1] Tonne = Metric ton.

Note: If a non-standard blend not listed in section 11 of the data reporting instructions and guidelines is to be reported, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported in the "remark" column or in the "comments" box above.

* See definition of "non-parties" in Instruction V.

[Data form 6 on HFC-23 emissions

1. Fill in this form only if your country generated HFC-23 from any facility that produced (manufactured) Annex C Group I or Annex F substances

2. Please read instruction VI carefully before filling in this form

DATA FORM 6

Dataform/2018

DATA ON QUANTITY OF EMISSIONS OF HFC-23 FROM FACILITIES MANUFACTURING ANNEX C GROUP I OR ANNEX F SUBSTANCES

in tonnes[1] (not ODP or CO_2-equivalent tonnes)

Party: _____

Period: January – December 20____

(1) Facility name or identifier	*(2) Emissions of HFC-23 (amount)*	*(3) Remarks*

Comments:

[1] Tonne = Metric ton.

Note: By-production that is captured, whether for destruction, feedstock or any other use, shall be reported as production in data form 3. Amount converted to other substances shall be reported as production for feedstock uses in data form 3.

Annex to data form 6 on HFC-23 emissions **Dataform/2018**

Note: This annex is excluded from the reporting requirements under Article 7 of the Protocol, and the information in the annex is to be provided on a voluntary basis.

Information required under paragraph 3 ter of Article 7			***Optional information:* the information in these columns is to be provided on a voluntary basis***	
(1) *Facility name or identifier*	*(2)* *Emissions of HFC-23 (amount)*	*(3)* *Remark*	*(4)* *Substance (HCFC or HFC) manufactured (produced) by the facility*	*(5)* *Amount manufactured (produced) by the facility (tonnes)*

Appendix I

Data reporting instructions and guidelines

Section 1: Introduction

1.1 The attached data forms have been designed to make reporting easier for the parties. The reporting is prescribed by Article 7 of the Montreal Protocol and further described in various decisions of the Meeting of the Parties. Some decisions introduce additional items that parties may report voluntarily.

1.2 The data reported in accordance with the data forms will be used to determine the calculated levels of production and consumption, upon which the control measures are based.

1.3 The major features of the forms are as follows:

(a) Six separate data forms are provided for imports, exports, production, destruction, trade with non-parties and emissions of controlled substances. Please use only those data forms applicable to your country and ignore the other forms, after ticking off the respective "No" box in the questionnaire. For example, many parties only import and do not export, produce, destroy or trade with non-parties in any of the substances. If this is the case, please use only data form 1 on imports and ignore the other forms, after ticking off the "No" boxes for questions 1.2 – 1.6 on the questionnaire.

(b) A row has been provided for each of the substances in Annex A and Annex F. However, for categories of "Other CFCs" (Annex B Group I) and HCFCs (Annex C Group I), the form is made shorter by providing rows only for substances commonly reported by parties in the past. A few blank rows are provided for more substances, if needed. HBFCs and BCM (Annex C Groups II and III) have already been phased out by all parties; hence, one blank row has been provided for them as a formality only. You may use the computerized forms supplied by the Secretariat or paper forms. Parties who use the computerized forms can easily add more rows as needed; parties using paper forms are free to add pages as required.

(c) The following are some of the different categories of uses of controlled substances that need to be reported:

- Feedstock uses for all substances
- Essential uses, including laboratory and analytical uses, for substances as approved by the Meeting of the Parties from time to time
- Quarantine and pre-shipment applications for methyl bromide
- Process agent uses for specific applications as approved in table A of decision X/14 and updated periodically by the Meeting of the Parties
- Critical or emergency uses of methyl bromide as approved from time to time
- Exemption for high-ambient-temperature parties

It is necessary for each party to specify how much of its production, export or import is used for these categories. Where applicable, the Secretariat will deduct these quantities from the total figures. Provision is made in the data forms for these categories. For exempted essential, critical, high-ambient-temperature or other uses, provision has also been made for parties to specify the decision of the Meeting of the Parties that approved the use.

(d) The same forms can be used for reporting for baseline years and other years. It should be noted that paragraphs 1 and 2 of Article 7 of the Montreal Protocol both provide that the parties may submit the best possible estimates of data for the base years if actual data are not available.

(e) The basis for reporting requirements and definitions are given in sections 2 and 4 below respectively.

(f) A "remarks" column has been provided at the end of each row, and a "comments" box has been provided at the end of each form, for parties to include any additional information that they believe would assist the Secretariat in processing their data report.

Section 2: Reporting of data and clarifications associated with Article 7 of the Montreal Protocol

Reporting set out under Article 7 of the Montreal Protocol, and related requests pursuant to decisions by the Meeting of the Parties

Basis for reporting under Article 7	*Information to be provided*
Annual data reporting under Article 7	**(reported annually)**
(a) Article 7 paragraphs 3, 3 bis and 3 ter	Statistical data on production of each of the controlled substances
	Amounts used for feedstock
	Amounts destroyed by technologies approved by the parties
	Imports from and exports to parties and non-parties respectively
	Statistical data on the amount of methyl bromide used for quarantine and pre-shipment applications
	Statistical data on imports and exports of recycled halons and HCFCs
	Statistical data on emissions of HFC-23 per facility in accordance with paragraph 1 (d) of Article 3 of the Protocol
(b) To verify implementation of Articles 2A to 2F and 2H	Excess production above the control limit in order to satisfy the basic domestic needs of parties operating under paragraph 1 of Article 5 (Article 5 parties)
(c) Decision IV/11, paragraph 3	Actual quantities of controlled substances destroyed
(d) Decision VII/30, paragraph 1	Volumes of controlled substances imported for feedstock uses by importing countries
(e) Decision XI/13, paragraph 3	Amount of methyl bromide used for quarantine and pre-shipment applications
(f) Decision XVII/16, paragraph 4, and decision VII/9, paragraph 4	Types, quantities and destinations of exports of all controlled substances
(g) Decision XXIV/12, paragraph 1	Types, quantities and exporting party for quantities reported as imports
Baseline data reporting under Article 7	**(reported once)**
Article 7, paragraphs 1 and 2	Statistical data on production, imports and exports of each of the controlled substances in: - Annex A, for the year 1986 - Annex B and Groups I and II of Annex C, for the year 1989 - Annex E, for the year 1991 - Annex F: by parties not operating under paragraph 1 of Article 5, for the years 2011 to 2013; by Article 5, group 1 parties, for the years 2020 to 2022; and by Article 5, group 2 parties, for the years 2024 to 2026 or the best possible estimates of such data where actual data are not available, within three months of entry into force

Definitions and clarifications on calculating production and consumption using the reported data

Basis for clarification	*Guidance provided*
a) Article 1, paragraph 5	Subtract the amount destroyed by technologies approved by the parties and the amount entirely used as feedstock in the manufacture of other chemicals from production. The amount recycled and reused is not to be considered as production.
b) Article 1, paragraph 6	"Consumption" means production plus imports minus exports of controlled substances.
c) Article 2H, paragraph 6	Calculated levels of consumption and production for methyl bromide shall not include the amounts used for quarantine and pre-shipment applications.
d) Article 3, paragraph 1 (c)	Beginning on 1 January 1993, any export of controlled substances to non-parties shall not be subtracted in calculating the consumption level of the exporting party. Note that this does not apply to HFCs.

Basis for clarification	*Guidance provided*
e) Decision IV/24, paragraph 2	The import and export of recycled and used controlled substances should not be taken into account for calculating consumption (except when calculating the base year consumption under paragraph 1 of Article 5 of the Protocol).
f) Decisions X/14, paragraph 3	Quantities of controlled substances produced or imported for the purpose of being used as process agents in plants and installations in operation before 1 January 1999 should not be taken into account in the calculation of production and consumption from 1 January 2002 onwards.
g) Decision VII/30, paragraph 1	The amount of controlled substances produced and exported for the purpose of being entirely used as feedstock in the manufacture of other chemicals in importing countries should not be the subject of the calculation of production or consumption in exporting countries.
h) Decision VII/30, paragraph 2	The amount of controlled substances entirely used as feedstock in the manufacture of other chemicals should not be the subject of calculation of consumption in importing countries.

Section 3: General instructions

3.1 Parties are requested to report the production and consumption of bulk controlled substances in tonnes, **without** multiplying by the relevant ozone-depleting-potential or global-warming-potential values.

3.2 In order to avoid duplication, quantities contained in manufactured products should not be included in a country's consumption, regardless of whether the end-products are imported or exported.

3.3 It is crucial that data be provided separately for each individual substance listed in the forms. Further, as requested in decision XXIV/14, parties should enter a number in each cell in the data reporting forms that they submit, including zero, where appropriate, rather than leaving any cells blank. This provision does not apply to optional or voluntary data in the reporting forms.

3.4 When calculating production, the Montreal Protocol allows countries to deduct amounts of controlled substances destroyed and amounts used for feedstock and for quarantine and pre-shipment applications. However, when reporting production data, parties **should not deduct** these figures from their data. The Secretariat will make the necessary deductions.

3.5 Parties with approved essential-use exemption should report to the Secretariat on the amounts of controlled substances produced or consumed for those uses using the accounting form approved by decision VIII/9, paragraph 9.

3.6 Parties with approved critical-use exemptions should report to the Secretariat on the amounts of methyl bromide produced or consumed for those uses using the form approved by decision Ex.I/4, paragraph 9 (f) and decision Ex.II/1, paragraph 3.

3.7 Parties might import or export mixtures or blends containing controlled substances, in particular Annex F substances. If this is the case, the parties may choose to report the quantity of the mixture or blend in the designated section on the form. If you choose to report mixtures or blends, please take care to ensure that the quantities reported are those of the mixtures or blends, not their individual constituents. The Secretariat will calculate the quantity of each pure substance from the mixtures or blends and will include the appropriate quantities of those pure substances in the reported data. An illustrative list of mixtures and blends containing controlled substances with their compositions is given in section 11 of these data reporting instructions and guidelines. If the mixture or blend being reported is not included in section 11, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported. For further information about the composition and commercial trade names of chemical products containing controlled substances, visit the "Trade names of chemicals containing ozone-depleting substances and their alternatives" page of the OzonAction website.[1] This worldwide database service is designed to help customs officials and national ozone units control imports and exports of controlled substances and prevent their illegal trade.

[1] http://www.unep.fr/ozonaction/library/tradenames/main.asp

3.8 Parties listed in Appendix II to decision XXVIII/2 that produce or consume controlled substances under the high-ambient-temperature exemption should also report separately production and consumption data to the Secretariat for the subsectors to which the exemption applies (decision XXVIII/2, paragraph 30). Subsector-specific information should be provided by the country using the exemption, not by the producer country. Production under the high-ambient-temperature exemption should only be reported if the production is for use internally by the producing country, not for export.

Section 4: Definitions

4.1 "Consumption" means production plus imports minus exports of controlled substances (Montreal Protocol, Article 1).

4.2 "Controlled substance" means a substance in Annex A, Annex B, Annex C, Annex E or Annex F to the Protocol, whether existing alone or in a mixture. It includes the isomers of any such substance except as specified in the relevant annex, but excludes any controlled substance or mixture (blend) that is in a manufactured product other than a container used for the transportation or storage of that substance (Montreal Protocol, Article 1).

4.3 "Destruction process" is one that, when applied to controlled substances, results in the permanent transformation or decomposition of all or a significant portion of such substances (decisions I/12F, IV/11, V/26 and VII/35).

4.4 "Production" means the amount of controlled substances produced, minus the amount destroyed by technologies approved by the parties and minus the amount entirely used as feedstock in the manufacture of other chemicals. The data forms prescribe reporting of feedstock use and of quantities destroyed separately, and reporting of total production **without** deduction. The Secretariat will make the necessary deduction.

4.5 Amounts recovered, reclaimed or recycled (or reused) are not to be considered as "production" (Montreal Protocol, Article 1), even though they are to be reported (Article 7 of the Protocol).

"Recovery, recycling and reclamation" have been defined by the parties (decision IV/24) as follows:

(a) Recovery: The collection and storage of controlled substances from machinery, equipment, containment vessels, etc., during servicing or prior to disposal;

(b) Recycling: The reuse of a recovered controlled substance following a basic cleaning process such as filtering and drying. For refrigerants, recycling normally involves recharge back into equipment. It often occurs "on-site";

(c) Reclamation: The re-processing and upgrading of a recovered controlled substance through such mechanisms as filtering, drying, distillation and chemical treatment in order to restore the substance to a specified standard of performance. It often involves processing "off-site" at a central facility.

4.6 "Quarantine and pre-shipment applications" have been defined by the parties (decision VII/5) as follows:

(a) "Quarantine applications", with respect to methyl bromide, are treatments to prevent the introduction, establishment and/or spread of quarantine pests (including diseases), or to ensure their official control, where:

(i) Official control is that performed by, or authorized by, a national plant, animal or environmental protection or health authority;

(ii) Quarantine pests are pests of potential importance to the areas endangered thereby and not yet present there, or present but not widely distributed and being officially controlled.

(b) "Pre-shipment applications" are those treatments applied directly preceding and in relation to export, to meet the phytosanitary or sanitary requirements of the importing country or existing phytosanitary or sanitary requirements of the exporting country.

4.7 The Eleventh Meeting of the Parties decided in decision XI/12 that pre-shipment applications are those non-quarantine applications applied within 21 days prior to export to meet the official requirements of the importing country or existing official requirements of the exporting country. Official requirements are those that are performed by, or authorized by, a national plant, animal, environmental, health or stored product authority.

4.8 On transhipment and re-export of substances, the Fourth Meeting of the Parties decided (decision IV/14):

"To clarify Article 7 of the amended Protocol so that it is understood to mean that, in cases of tran(s)shipment of controlled substances through a third country (as opposed to imports and subsequent re-exports), the country of origin of the controlled substances shall be regarded as the exporter and the country of final destination shall be regarded as the importer. In such cases, the responsibility for reporting data shall lie with the country of origin as the exporter and the country of final destination as the importer. Cases of import and re-export should be treated as two separate transactions; the country of origin would report shipment to the country of intermediate destination, which would subsequently report the import from the country of origin and export to the country of final destination, while the country of final destination would report the import."

4.9 With respect to trade in bulk methyl bromide, the Eighth Meeting of the Parties decided (decision VIII/14):

"To clarify decision I/12A of the First Meeting of the Parties as follows: trade and supply of methyl bromide in cylinders or any other container will be regarded as trade in bulk in methyl bromide."

4.10 "Regional economic integration organization" means an organization constituted by sovereign States of a given region that has competence in respect of matters governed by the Vienna Convention for the Protection of the Ozone Layer or its protocols and has been duly authorized, in accordance with its internal procedures, to sign, ratify, accept, approve or accede to the instruments concerned. The only such organization for the purpose of the Montreal Protocol is the European Union.

4.11 The Montreal Protocol stipulates, under paragraph 8 (a) of Article 2, that any parties which are member States of a regional economic integration organization as defined above may agree that they shall jointly fulfil their obligations respecting consumption provided that their total combined calculated level of consumption under Articles 2A to 2J of the Protocol does not exceed the levels required by those articles.

Section 5: Instruction I on data on imports of controlled substances (data form 1)

5.1 Please use data form 1 to report data on imports of substances listed in Annex A (CFCs and halons), Annex B (other fully halogenated CFCs, methyl chloroform and carbon tetrachloride), Annex C (HCFCs, HBFCs and BCM), Annex E (methyl bromide) and Annex F (HFCs).

5.2 All the substances in Annex A, Annex B (Groups II and III) and Annex F are listed in column 2 of data form 1. For Annex B Group I (other fully halogenated CFCs) and Annex C Group I (HCFCs), only substances that have been reported by parties in the past are listed. HBFCs and BCM have already been phased out by all parties, and hence for HBFCs and BCM one blank row has been provided as a formality only. If you are importing controlled substances other than those listed, please use the blank space to report data on those substances, and use additional pages, if necessary.

5.3 If your country imported mixtures (blends) of controlled substances, e.g., R-410A (50% HFC-32; 50% HFC-125), you may choose to report only the quantity of the mixture or blend or the individual constituents of the blend directly. If you choose to report mixtures or blends rather than their individual constituents, please take care to ensure that the quantities reported are those of the mixtures or blends, not their individual constituents. The Secretariat will calculate the quantity of the individual pure controlled substances contained in the mixture or blend and enter the appropriate data under each controlled substance. An illustrative list of mixtures with their compositions is given in section 11 of these data reporting instructions and guidelines. If the mixture being reported is not included in section 11, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported. For further information about the composition and commercial trade names of chemical products containing controlled substances, visit the "Trade names of chemicals containing ozone-depleting substances and their alternatives" page on the OzonAction website.[2] This worldwide database service is designed to help customs officials and national ozone units control imports and exports of controlled substances and prevent their illegal trade.

[2] http://www.unep.fr/ozonaction/library/tradenames/main.asp.

5.4 Please enter the number of tonnes imported in column 3 of data form 1 for each substance imported. If you did not import any of the substances listed, or if you have imported only recovered or reclaimed substances, please enter a zero in column 3, "New", for each substance. If you imported any recovered or reclaimed substances, please enter the data in column 4.

5.5 When calculating a party's consumption, substances used as feedstock for the production of other chemicals are exempted, as such substances are completely transformed in the manufacturing process of the new chemical. In reporting total quantities of new substances imported in column 3, **do not deduct** the quantities imported for feedstock reported in column 5. Similarly, **do not deduct** the quantities imported for exempted essential, critical, high-ambient-temperature or other uses reported in column 6. The Secretariat will make the necessary deductions. In column 7, please indicate, for each type of controlled substance imported for exempted essential, critical, high-ambient-temperature or other uses, the decision of the Meeting of the Parties that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box at the bottom of the form.

5.6 When calculating a party's consumption of methyl bromide, the quantities used for quarantine and pre-shipment applications are excluded. In data form 1, please enter the quantities of methyl bromide imported for quarantine and pre-shipment applications separately at the bottom of the form, and **do not deduct them** from the total quantity imported. The Secretariat will make the necessary deductions.

5.7 Decision XXIV/12, paragraph 1, requested the Secretariat to revise the reporting forms resulting from decision XVII/16 to include an annex indicating the exporting party for the quantities reported as imports, noting that the annex is excluded from the reporting requirements under Article 7 of the Protocol, and that the information in the annex would be provided on a voluntary basis. If a particular controlled substance is imported from more than one country, please indicate the quantity imported from each country separately. Please see the example below.

Annex to data form 1 - Exporting parties for quantities reported as imports **Dataform/2018**

Note: This annex is excluded from the reporting requirements under Article 7 of the Protocol, and the information in the annex is to be provided on a voluntary basis (decision XXIV/12)

(1) Substance	*(2) Exporting party for quantities reported as imports*	*Total quantity imported for all uses*		*(5) Quantity of new substance imported for feedstock uses*	*Quantity of new substance imported for exempted essential, critical, high-ambient-temperature or other uses**	
		(3) New	*(4) Recovered and reclaimed*		*(6) Quantity*	*(7) Decision / type of use* or remark*
HCFC-22	**Country AAA**	**50**				
HCFC-22	**Country BBB**	**75**				
HFC-134a	**Country AAA**	**80**				
HFC-134a	**Country CCC**	**60**				
HFC-134a	**Country DDD**	**30**				
Methyl bromide (CH_3Br)					*Quantity of new methyl bromide imported to be used for quarantine and pre-shipment applications within your country*	

Comments:

* Against each substance imported for exempted essential, critical, high-ambient-temperature or other uses, please specify the Meeting of the Parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

Section 6: Instruction II on data on exports of controlled substances (data form 2)

6.1 Please use data form 2 to report data on exports, including re-exports, of substances listed in Annex A (CFCs and halons), Annex B (other fully halogenated CFCs, methyl chloroform and carbon tetrachloride), Annex C (HCFCs, HBFCs and BCM), Annex E (methyl bromide) and Annex F (HFCs).

6.2 Data on re-exports of the substances listed above should also be included in this form. Decision IV/14 clarified that cases of import and re-export should be treated as two separate transactions, so that the country of intermediate destination would report both the import from the country of origin and re-export to the country of final destination.

6.3 The first column ("Substance") has been left blank because each party may export different substances. Please add the names and relevant information of only those substances being exported by your country.

6.4 If your country exported mixtures (blends) of controlled substances, e.g., R-410A (50% HFC-32; 50% HFC-125), you may choose to report only the quantity of the mixture or blend, or the individual constituents of the blend directly. If you choose to report mixtures or blends rather than their individual constituents, please take care to ensure that quantities reported are those of the mixtures or blends, not their individual constituents. The Secretariat will calculate the quantity of the individual pure controlled substances contained in the mixture or blend and enter the appropriate data under each controlled substance. An illustrative list of mixtures with their compositions is given in section 11 of these data reporting instructions and guidelines. If the mixture being reported is not included in section 11, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported. For further information about the composition and commercial trade names of chemical products containing controlled substances, visit the "Trade names of chemicals containing ozone-depleting substances and their alternatives" on the OzonAction website.[3] This worldwide database service is designed to help customs officials and national ozone units control imports and exports of controlled substances and prevent illegal trade.

6.5 In decision VII/9, paragraph 4, parties were requested to report on the destination of Annex A and Annex B substances (new, recovered or reclaimed) that are exported. Decision XVII/16, paragraph 4, extended this arrangement to cover the export of all controlled substances contained in the annexes of the Protocol. Please fill in column 2 on the destination of exports, ensuring that if a particular controlled substance is exported to more than one country, the quantity exported to each country is indicated separately. Please see the example below.

[3] http://www.unep.fr/ozonaction/library/tradenames/main.asp.

1. Fill in this form only if your country exported or re-exported CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs

DATA FORM 2

DATA ON EXPORTS*

Dataform/2018

2. Please read instruction II carefully before filling in this form.

in tonnes[1] (not ODP or CO_2-equivalent tonnes)

Annex A, B, C, E and F substances

Party: _____

Period: January – December 20___

(1) Substance	*(2) Country of destination of exports***	*Total quantity exported for all uses*		*(5) Quantity of new substance exported for feedstock****	*Quantity of new substances exported for exempted essential, critical, high-ambient-temperature or other uses*****	
		(3) New	*(4) Recovered and reclaimed*		*(6) Quantity*	*(7) Decision / type of use***** *or remarks*
HCFC-22	**Destination AAA**	**50**				
HCFC-22	**Destination BBB**	**75**				
HFC-134a	**Destination AAA**	**80**				
HFC-134a	**Destination CCC**	**60**				
HFC-134a	**Destination DDD**	**30**				
Methyl bromide (CH_3Br)					*Quantity of new methyl bromide exported to be used for quarantine and pre-shipment applications*	
Comments:						

[1] Tonne = metric ton.

Note: If a non-standard blend not listed in section 11 of the data reporting instructions and guidelines is to be reported, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported in the "remarks" column or in the "comments" box above.

* Includes re-exports. Ref: decisions IV/14 and XVII/16, paragraph 4.

** Applicable to all substances, including those contained in mixtures and blends.

*** Do not deduct from total production in column 3 of data form 3 (data on production).

**** Against each substance exported for exempted essential, critical, high-ambient-temperature or other uses, please specify the Meeting of the Parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

6.6 If your country is exporting new controlled substances, please provide the quantity in tonnes for the chemical(s) you exported in column 3. If you exported any recovered or reclaimed substances, please enter the data in column 4.

6.7 Under the Montreal Protocol, controlled substances used as feedstock for the production of other chemicals are not included in the calculation of a party's consumption, as such controlled substances are completely transformed in the manufacturing process of new chemicals. When reporting the total quantities of new substances exported in column 3, **do not deduct** the quantities exported to be used as feedstock reported in column 5. Similarly, **do not deduct** the quantities exported for exempted essential, critical, high-ambient-temperature or other uses, reported in column 6. In column 7, please indicate, for each type of controlled substance exported for exempted essential, critical, high-ambient-temperature or other uses, the decision of the Meeting of the Parties that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box at the end of the form.

6.8 When calculating a party's consumption of methyl bromide, quantities used for quarantine and pre-shipment applications are exempted. In data form 2, please enter quantities of methyl bromide exported for quarantine and pre-shipment applications separately, and **do not deduct them** from the quantity exported. The Secretariat will make the necessary deductions.

Section 7: Instruction III on data on production of controlled substances (data form 3)

7.1 Please use data form 3 to report data on production of substances listed in Annex A (CFCs and halons), Annex B (other fully halogenated CFCs, methyl chloroform and carbon tetrachloride), Annex C (HCFCs, HBFCs and BCM), Annex E (methyl bromide) and Annex F (HFCs).

7.2 All the substances in Annex A, Annex B Groups II and III, and Annex F are listed in column 2 of data form 3. For Annex B Group I (other fully halogenated CFCs) and Annex C Group I (HCFCs), only substances that have been reported by parties in the past are listed. HBFCs and BCM have already been phased out by all parties and hence one row has been provided as a formality only. If you are producing controlled substances other than those listed, please use the blank space to report data on those substances, or use additional pages, if necessary.

7.3 In column 3 of data form 3, please give the **total** production of your country **without** making any deductions for feedstock, destruction, export for feedstock uses, or any other use. **Do not deduct** from your total production the quantity of production used for feedstock **within** your country reported in column 4, or the production for exempted essential, critical, high-ambient-temperature or other uses within your country reported in column 5. Similarly, **do not deduct** from your total production the quantity of production for supply to Article 5 parties reported in column 7. Please report exports of controlled substances to be used for feedstock by the importing country in column 5 of data form 2 (data on exports), not in data form 3 (this form). The Secretariat will make the necessary deductions. With regard to production for exempted essential, critical, high-ambient-temperature or other uses, please indicate in column 6, for each type of controlled substance produced for exempted essential, critical, high-ambient-temperature or other uses, the decision of the Meeting of the Parties that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box at the end of the form.

7.4 When calculating a party's consumption, the Montreal Protocol does not include controlled substances used as feedstock for the production of other chemicals, as such controlled substances are completely transformed in the manufacturing process of the new chemical. If your country produced controlled substances for feedstock use within the reporting period, please provide data on the quantity of each controlled substance produced for feedstock purposes in column 4. The Secretariat will make the necessary deductions. By-production that is captured, whether for destruction, feedstock or any other use, shall be reported as production. Amounts converted to other substances shall be reported as production for feedstock uses.

7.5 Producers are allowed to produce additional amounts to meet the basic domestic needs of Article 5 parties. If your country produced controlled substances for this purpose, please enter the amount so produced in column 7 of data form 3.

7.6 When calculating a party's consumption of methyl bromide, quantities produced for quarantine and pre-shipment applications are exempted. Please enter the total quantities of methyl bromide produced for quarantine and pre-shipment applications separately at the bottom of data form 3 and **do not deduct them** from the total quantity produced. The Secretariat will make the necessary deductions.

Section 8: Instruction IV on data on destruction of controlled substances (data form 4)

8.1 Very few countries have the capacity to destroy controlled substances using approved destruction technologies. If your country has destroyed any of the substances listed in Annex A (CFCs and halons), Annex B (other fully halogenated CFCs, methyl chloroform and carbon tetrachloride), Annex C (HCFCs, HBFCs and BCM), Annex E (methyl bromide) and Annex F (HFCs) in the reporting period, please use data form 4.

8.2 The first column ("Substance") has been left blank because each party may destroy different substances. Please list only the names of those substances destroyed in the reporting year.

8.3 Under the Montreal Protocol, the amount of substances destroyed is not included in the calculation of a party's production and consumption if destruction occurred through the use of an approved technology (listed in decision XXIII/12 and any subsequent relevant decisions). If you have destroyed any substance in the reporting year, **do not deduct** the quantity destroyed reported in column 2 of data form 4 from the total production reported in column 3 of data form 3. The Secretariat will make the necessary deductions.

Section 9: Instruction V on data on imports from and exports to non-parties (data form 5)

9.1 Please use data form 5 to report data on imports from and exports to non-parties of substances of Annex A (CFCs and halons), Annex B (other fully halogenated CFCs, methyl chloroform and carbon tetrachloride), Annex C (HCFCs, HBFCs and BCM) and Annex E (methyl bromide).

9.2 The first column ("Substance") has been left blank because each party may import different substances from and/or export different substances to non-parties. Please fill in only the names of those substances that were imported from and/or exported to non-parties.

9.3 For purposes of these data forms, "non-party" means:

- With respect to Annex A substances, all countries that have not ratified the 1987 Montreal Protocol;
- With respect to Annex B substances, all countries that have not ratified the London Amendment;
- With respect to Annex C substances, all countries that have not ratified the Copenhagen Amendment;
- With respect to Annex E substances, all countries that have not ratified the Copenhagen Amendment;

except where the parties have otherwise specified by means of a decision.

9.4 Any export of HFC reported as export to a non-party shall not be treated as export to non-parties for the purpose of calculating the consumption level as specified in paragraph 1 (c) of Article 3 of the Montreal Protocol. Therefore, exports of HFCs to non-parties should not be reported under data form 5 but should be reported under data form 2.

9.5 The status of ratification of the Montreal Protocol and its amendments can be found in a document published by the Secretariat and updated twice a year. That information is also available on the website of the Ozone Secretariat, at: http://ozone.unep.org/.

Section 10: Instruction VI on data on emissions of Annex F Group II substance – HFC-23 (data form 6)

10.1 Very few countries will have manufacturing facilities for Annex C Group I or Annex F substances that generate HFC-23. If your country has such facilities that were operational in the reporting period, please use data form 6 to report emissions of HFC-23 from each facility. If there were no emissions from a manufacturing facility, please include the facility in the data form and enter a zero in the emissions column.

10.2 The amounts of production or by-production captured for use, feedstock, destruction or storage shall be reported in data form 3 on production. The amounts converted to other substances shall be reported as production for feedstock uses in data form 3.

Section 11: Illustrative list of mixtures containing controlled substances[4]

11.1 Zeotropic mixtures

No.	Refrigerant	Composition											
		Component 1		Component 2		Component 3		Component 4		Component 5		Component 6	
1.	R-401A	HCFC-124	34%	HCFC-22	53%	HFC-152a	13%						
2.	R-401B	HCFC-124	28%	HCFC-22	61%	HFC-152a	11%						
3.	R-401C	HCFC-124	52%	HCFC-22	33%	HFC-152a	15%						
4.	R-402A	HC-290	2%	HCFC-22	38%	HFC-125	60%						
5.	R-402B	HC-290	2%	HCFC-22	60%	HFC-125	38%						
6.	R-403A	HC-290	5%	HCFC-22	75%	PFC-218	20%						
7.	R-403B	HC-290	5%	HCFC-22	56%	PFC-218	39%						
8.	R-404A	HFC-125	44%	HFC-134a	4%	HFC-143a	52%						
9.	R-405A	HCFC-142b	6%	HCFC-22	45%	HFC-152a	7%	PFC-C318	43%				
10.	R-406A	HC-600a	4%	HCFC-142b	41%	HCFC-22	55%						
11.	R-407A	HFC-125	40%	HFC-134a	40%	HFC-32	20%						
12.	R-407B	HFC-125	70%	HFC-134a	20%	HFC-32	10%						
13.	R-407C	HFC-125	25%	HFC-134a	52%	HFC-32	23%						
14.	R-407D	HFC-125	15%	HFC-134a	70%	HFC-32	15%						
15.	R-407E	HFC-125	15%	HFC-134a	60%	HFC-32	25%						
16.	R-407F	HFC-125	30%	HFC-134a	40%	HFC-32	30%						
17.	R-407G	HFC-125	2.5%	HFC-134a	95%	HFC-32	2.5%						
18.	R-408A	HCFC-22	47%	HFC-125	7%	HFC-143a	46%						
19.	R-409A	HCFC-124	25%	HCFC-142b	15%	HCFC-22	60%						
20.	R-409B	HCFC-124	25%	HCFC-142b	10%	HCFC-22	65%						
21.	R-410A	HFC-125	50%	HFC-32	50%								
22.	R-410B	HFC-125	55%	HFC-32	45%								
23.	R-411A	HO-1270	1.5%	HCFC-22	87.5%	HFC-152a	11%						
24.	R-411B	HO-1270	3%	HCFC-22	94%	HFC-152a	3%						
25.	R-412A	HCFC-142b	25%	HCFC-22	70%	PFC-218	5%						
26.	R-413A	HC-600a	3%	HFC-134a	88%	PFC-218	9%						
27.	R-414A	HC-600a	4%	HCFC-124	28.5%	HCFC-142b	16.5%	HCFC-22	51%				
28.	R-414B	HC-600a	1.5%	HCFC-124	39%	HCFC-142b	9.5%	HCFC-22	50%				
29.	R-415A	HCFC-22	82%	HFC-152a	18%								
30.	R-415B	HCFC-22	25%	HFC-152a	75%								
31.	R-416A	HC-600	1.5%	HCFC-124	39.5%	HFC-134a	59%						
32.	R-417A	HC-600	3.4%	HFC-125	46.6%	HFC-134a	50%						
33.	R-417B	HC-600	2.7%	HFC-125	79%	HFC-134a	18.3%						
34.	R-417C	HC-600	1.7%	HFC-125	19.5%	HFC-134a	78.8%						
35.	R-418A	HC-290	1.5%	HCFC-22	96%	HFC-152a	2.5%						
36.	R-419A	HCE-170	4%	HFC-125	77%	HFC-134a	19%						
37.	R-419B	HCE-170	3.5%	HFC-125	48.5%	HFC-134a	48%						
38.	R-420A	HCFC-142b	12%	HFC-134a	88%								
39.	R-421A	HFC-125	58%	HFC-134a	42%								
40.	R-421B	HFC-125	85%	HFC-134a	15%								

[4] For more information about trade names for mixtures and pure substances, visit the "Trade names of chemicals containing ozone-depleting substances and their alternatives" page on the UNEP Division of Technology, Industry and Economics (DTIE) OzonAction website, at http://www.unep.fr/ozonaction/library/tradenames/main.asp. This worldwide database service is designed to help customs officials and national ozone units control imports and exports of controlled substances and prevent their illegal trade.

No.	Refrigerant	Composition											
		Component 1		Component 2		Component 3		Component 4		Component 5		Component 6	
41.	R-422A	HC-600a	3.4%	HFC-125	85.1%	HFC-134a	11.5%						
42.	R-422B	HC-600a	3%	HFC-125	55%	HFC-134a	42%						
43.	R-422C	HC-600a	3%	HFC-125	82%	HFC-134a	15%						
44.	R-422D	HC-600a	3.4%	HFC-125	65.1%	HFC-134a	31.5%						
45.	R-422E	HC-600a	2.7%	HFC-125	58%	HFC-134a	39.3%						
46.	R-423A	HFC-134a	52.5%	HFC-227ea	47.5%								
47.	R-424A	HC-600	1%	HC-600a	0.9%	HC-601a	0.6%	HFC-125	50.5%	HFC-134a	47%		
48.	R-425A	HFC-134a	69.5%	HFC-227ea	12%	HFC-32	18.5%						
49.	R-426A	HC-600	1.3%	HC-601a	0.6%	HFC-125	5.1%	HFC-134a	93%				
50.	R-427A	HFC-125	25%	HFC-134a	50%	HFC-143a	10%	HFC-32	15%				
51.	R-428A	HC-290	0.6%	HC-600a	1.9%	HFC-125	77.5%	HFC-143a	20%				
52.	R-429A	HC-600a	30%	HCE-170	60%	HFC-152a	10%						
53.	R-430A	HC-600a	24%	HFC-152a	76%								
54.	R-431A	HC-290	71%	HFC-152a	29%								
55.	R-434A	HC-600a	2.8%	HFC-125	63.2%	HFC-134a	16%	HFC-143a	18%				
56.	R-435A	HCE-170	80%	HFC-152a	20%								
57.	R-437A	HC-600	1.4%	HC-601	0.6%	HFC-125	19.5%	HFC-134a	78.5%				
58.	R-438A	HC-600	1.7%	HC-601a	0.6%	HFC-125	45%	HFC-134a	44.2%	HFC-32	8.5%		
59.	R-439A	HC-600a	3%	HFC-125	47%	HFC-32	50%						
60.	R-440A	HC-290	0.6%	HFC-134a	1.6%	HFC-152a	97.8%						
61.	R-442A	HFC-125	31%	HFC-134a	30%	HFC-152a	3%	HFC-227ea	5%	HFC-32	31%		
62.	R-444A	HFC-152a	5%	HFC-32	12%	HFO-1234ze (E)	83%						
63.	R-444B	HFC-152a	10%	HFC-32	41.5%	HFO-1234ze (E)	48.5%						
64.	R-445A	HFC-134a	9%	R-744	6%	HFO-1234ze (E)	85%						
65.	R-446A	HC-600	3%	HFC-32	68%	HFO-1234ze (E)	29%						
66.	R-447A	HFC-125	3.5%	HFC-32	68%	HFO-1234ze (E)	28.5%						
67.	R-447B	HFC-125	8%	HFC-32	68%	HFO-1234ze (E)	24%						
68.	R-448A	HFC-125	26%	HFC-134a	21%	HFO-1234ze (E)	7%	HFO-1234yf	20%	HFC-32	26%		
69.	R-449A	HFC-125	24.7%	HFC-134a	25.7%	HFC-32	24.3%	HFO-1234yf	25.3%				
70.	R-449B	HFC-125	24.3%	HFC-134a	27.3%	HFC-32	25.2%	HFO-1234yf	23.2%				
71.	R-449C	HFC-125	20%	HFC-134a	29%	HFC-32	20%	HFO-1234yf	31%				
72.	R-450A	HFC-134a	42%	HFO-1234ze (E)	58%								
73.	R-451A	HFC-134a	10.2%	HFO-1234yf	89.8%								
74.	R-451B	HFC-134a	11.2%	HFO-1234yf	88.8%								
75.	R-452A	HFC-125	59%	HFC-32	11%	HFO-1234yf	30%						
76.	R-452B	HFC-125	7%	HFC-32	67%	HFO-1234yf	26%						
77.	R-452C	HFC-125	61%	HFC-32	12.5%	HFO-1234yf	26.5%						
78.	R-453A	HC-600	0.6%	HC-601a	0.6%	HFC-125	20%	HFC-134a	53.8%	HFC-227ea	5%	HFC-32	20%
79.	R-454A	HFC-32	35%	HFO-1234yf	65%								

No.	Refrigerant	Composition											
		Component 1		Component 2		Component 3		Component 4		Component 5		Component 6	
80.	R-454B	HFC-32	68.9%	HFO-1234yf	31.1%								
81.	R-454C	HFC-32	21.5%	HFO-1234yf	78.5%								
82.	R-455A	HFC-32	21.5%	HFO-1234yf	75.5%	R-744	3%						
83.	R-456A	HFC-134a	45%	HFC-32	6%	HFO-1234ze (E)	49%						
84.	R-457A	HFC-152a	12%	HFC-32	18%	HFO-1234yf	70%						
85.	R-458A	HFC-125	4%	HFC-134a	61.4%	HFC-227ea	13.5%	HFC-236fa	0.6%	HFC-32	20.5%		
86.	R-459A	HFC-32	68%	HFO-1234yf	26%	HFO-1234ze (E)	6%						
87.	R-459B	HFC-32	21%	HFO-1234yf	69%	HFO-1234ze (E)	10%						
88.	R-460A	HFC-125	52%	HFC-134a	14%	HFO-1234ze (E)	22%	HFC-32	12%				
89.	R-460B	HFC-125	25%	HFC-134a	20%	HFO-1234ze (E)	27%	HFC-32	28%				

11.2 Azeotropic mixtures

No.	Refrigerant number (trade name) of mixture	Composition			
		Component 1		Component 2	
1.	R-500	CFC-12	73.8%	HFC-152a	26.2%
2.	R-501	CFC-12	25%	HCFC-22	75%
3.	R-502	CFC-115	51.2%	HCFC-22	48.8%
4.	R-503	CFC-13	59.9%	HFC-23	40.1%
5.	R-504	CFC-115	51.8%	HFC-32	48.2%
6.	R-505	CFC-12	78%	HCFC-31	22%
7.	R-506	CFC-114	45%	HCFC-31	55%
8.	R-507A (AZ-50)	HFC-125	50%	HFC-143a	50%
9.	R-508A	HFC-23	39%	PFC-116	61%
10.	R-508B	HFC-23	46%	PFC-116	54%
11.	R-509 (TP5R2)	HCFC-22	46%	PFC-218	54%
12.	R-509A	HCFC-22	44%	PFC-218	56%
13.	R-512A	HFC-134a	5%	HFC-152a	95%
14.	R-513A (XP10/DR-11)	HFC-134a	44%	HFO-1234yf	56%
15.	R-513B	HFC-134a	41.5%	HFO-1234yf	58.5%
16.	R-515A	HFC-227ea	12%	HFO-1234ze (E)	88%

11.3 Other mixtures

No.	Trade name of mixture	Composition							
		Component 1		Component 2		Component 3		Component 4	
1.	FX 20	HFC-125	45%	HCFC-22	55%				
2.	FX 55	HCF-C22	60%	HCFC-142b	40%				
3.	D 136	HCFC-22	50%	HCFC-124	47%	HC-600a	3%		
4.	Daikin Blend	HFC-23	2%	HFC-32	28%	HCFC-124	70%		
5.	FRIGC	HCFC-124	39%	HCFC-134a	59%	HC-600a	2%		
6.	Free Zone	HCFC-142b	19%	HFC-134a	79%	Lubricant	2%		
7.	GHG-HP	HCFC-22	65%	HCFC-142b	31%	HC-600a	4%		
8.	GHG-X5	HCFC-22	41%	HCFC-142b	15%	HFC-227ea	40%	HC-600a	4%
9.	NARM-502	HCFC-22	90%	HFC-152a	5%	HFC-23	5%		
10.	NASF-S-III[5]	HCFC-22	82%	HCFC-123	4.75 %	HCFC-124	9.5%	HC-600a	3.75%

11.4 Methyl bromide mixtures

No.	Trade name of mixture	Composition			
		Component 1		Component 2	
1.	Methyl bromide with chloropicrin	Methyl bromide	67%	Chloropicrin	33%
2.	Methyl bromide with chloropicrin	Methyl bromide	98%	Chloropicrin	2%

[5] A halon alternative

Appendix II

Reporting provisions and clarifications associated with reporting of information other than Article 7 reporting

Reporting provisions and related decisions for reporting of information other than Article 7 reporting

Basis for reporting	*Information to be provided*
Transfer or addition of production or consumption	***(reported as and when it occurs)***
Article 2, paragraphs 5, 5 bis, 6, 7	Transfer or addition of production or consumption
Trade with non-parties (Article 4)	
Decision IV/17 A, paragraph 1	Information on the implementation of Article 4 of the Protocol, control of trade with non-parties
Licensing information	***(reporting periodicity specified below***
(a) Article 4B – Licensing	The establishment and operation of its licensing system *(reported once)*
(b) Decision IX/8, paragraph 2	Focal points for licensing systems for trade in controlled substances *(reported once, updated as required)*
(c) Decision XIV/7, paragraph 7	Information reported by the parties on illegal trade in controlled substances *(reported when cases occur)*
(d) Decision XXVII/8	Parties wishing to avoid the unwanted import of products and equipment containing or relying on hydrochlorofluorocarbons *(notification sent once)*
Research, development, public awareness and exchange of information	***(reported every two years)***
Article 9	Summary of activities
Essential-use exemptions other than laboratory and analytical uses[6]	***(reported the year following an exemption)***
Decision VIII/9, paragraph 9	Report on quantities and uses of controlled substances produced and consumed for essential uses (reporting accounting framework)
Essential-use exemptions: laboratory and analytical uses	***(reported annually)***
Decision VI/9, paragraph 4, of annex II to the report of the Sixth Meeting of the Parties	Each controlled substance produced for laboratory and analytical uses
Exemption for high-ambient-temperature parties	***(reported the year following an exemption)***
Decision XXVIII/2, paragraph 30	Report separately production and consumption data for the subsectors to which the exemption applies
Critical-use exemptions for methyl bromide information	***(reported once)***
(a) Decision Ex.I/3, paragraph 5	Parties that have a methyl bromide critical-use exemption to report on the implementation of the requirement to ensure that the criteria in paragraph 1 of decision IX/6 are applied when licensing, permitting or authorizing the use of methyl bromide and that such procedures take into account available stocks

[6] Decisions relating to essential-use exemptions for CFCs for metered-dose inhalers for the treatment of asthma and chronic obstructive pulmonary diseases are no longer included here, since such exemptions have been phased out.

Basis for reporting	*Information to be provided*
(b) Decision Ex.I/4, paragraph 2	Parties seeking methyl bromide critical-use exemptions and parties that have ceased methyl bromide consumption to submit information on the alternatives available, listed according to their pre-harvest or post-harvest uses and the possible date of registration, if required, for each alternative; and on the alternatives that the parties can disclose to be under development, listed according to their pre-harvest or post-harvest uses and the likely date of registration, if required and known, for those alternatives
(c) Decision Ex.I/4, paragraphs 3 and 6	Parties seeking methyl bromide critical-use exemptions to submit national methyl bromide phase-out strategy and describe methodology used to determine economic feasibility in the event that economic feasibility is used as a criterion to justify the critical use
(d) Decision Ex.I/4, paragraph 9 (f), and decision Ex.II/1, paragraph 3	Report on quantities and uses of methyl bromide produced, imported and exported for critical uses in accounting framework
Process agent uses	***(reported annually)***
Decisions X/14, XV/7, XVII/6 and XXI/3	Use of controlled substances as process agents, make-up amounts, resulting emissions, emission containment technologies employed and opportunities for emission reduction. Report on quantities of controlled substances produced or imported for process agent applications
Requests for changes in reported baseline data	***(reported once)***
(a) Decision XIII/15, paragraph 5	Requests for changes in reported baseline data for the base years to be presented to the Implementation Committee, which will in turn work with the Ozone Secretariat and the Executive Committee to confirm the justification for the changes and present them to the Meeting of the Parties for approval
(b) Decision XV/19, paragraph 2	Methodology for submission of requests for revision of baseline data: the information and documentation to be submitted
Other information	***(reporting periodicity specified below)***
(a) Decision V/15	Information relevant to international halon bank management *(reported once)*
(b) Decision V/25 and VI/14A	Parties supplying controlled substances to parties operating under paragraph 1 of Article 5 (Article 5 party) to provide annually summary of requests from importing parties *(reported annually)*
(c) Decision VI/19, paragraph 4	List of reclamation facilities and their capacities *(reported annually)*
(d) Decisions X/8 and IX/24	New ozone-depleting substances reported by the parties *(reported when new substances emerge)*
(e) Decision XX/7, paragraph 5	Strategies on environmentally sound management of banks of ozone-depleting substances *(reported once, updated as required)*

1. The control measures under Articles 2A-2E, 2G and 2I include a provision for parties to decide to permit levels of production or consumption that are necessary to satisfy uses agreed by them to be essential. Decision IV/25 on essential uses states that a use of a controlled substance should qualify as "essential" only if:

(a) It is necessary for the health, safety or is critical for the functioning of society (encompassing cultural and intellectual aspects); and

(b) There are no available technically and economically feasible alternatives or substitutes that are acceptable from the standpoint of environment and health.

2. The conditions applied to exemption for laboratory and analytical uses, which fall under essential uses, are provided in annex II to the report of the Sixth Meeting of the Parties.

3. The control measures under Article 2H include a provision for parties to decide to permit levels of production or consumption that are necessary to satisfy uses agreed by them to be critical uses. In decision IX/6 on critical uses, the parties agreed to apply the following criteria and procedure in assessing a critical methyl bromide use for the purposes of control measures in Article 2 of the Protocol:

(a) That a use of methyl bromide should qualify as "critical" only if the nominating party determines that:

(i) The specific use is critical because the lack of availability of methyl bromide for that use would result in a significant market disruption; and

(ii) There are no technically and economically feasible alternatives or substitutes available to the user that are acceptable from the standpoint of environment and health and are suitable to the crops and circumstances of the nomination;

(b) That production and consumption, if any, of methyl bromide for critical uses should be permitted only if:

(i) All technically and economically feasible steps have been taken to minimize the critical use and any associated emission of methyl bromide;

(ii) Methyl bromide is not available in sufficient quantity and quality from existing stocks of banked or recycled methyl bromide, also bearing in mind the developing countries' need for methyl bromide;

(iii) It is demonstrated that an appropriate effort is being made to evaluate, commercialize and secure national regulatory approval of alternatives and substitutes, taking into consideration the circumstances of the particular nomination and the special needs of Article 5 parties, including lack of financial and expert resources, institutional capacity, and information. Parties not operating under paragraph 1 of Article 5 (non-Article 5 parties) must demonstrate that research programmes are in place to develop and deploy alternatives and substitutes. Article 5 parties must demonstrate that feasible alternatives shall be adopted as soon as they are confirmed as suitable to the party's specific conditions and/or that they have applied to the Multilateral Fund or other sources for assistance in identifying, evaluating, adapting and demonstrating such options;

4. "Process agents" should be understood to mean the use of controlled substances for the applications listed in table A of decision X/14, as amended by various decisions. Amounts produced or imported for use as process agents in plants and installations in operation before 1 January 1999 should not be taken into account in the calculation of production and consumption from 1 January 2002 onwards, provided that:

(a) In the case of non-Article 5 parties, the emissions of controlled substances from these processes have been reduced to insignificant levels as defined in table B of decision X/14, as amended by various decisions;

(b) In the case of Article 5 parties, the emissions of controlled substances from process-agent use have been reduced to levels agreed by the Executive Committee to be reasonably achievable in a cost-effective manner without undue abandonment of infrastructure.

Appendix III

Reporting on consumption and production under the exemption for high-ambient-temperature parties

Section 1: Instruction VII on data on consumption (imports) under the exemption for high-ambient-temperature parties (data form 7)

1.1 If your country formally notified the Secretariat, as specified under paragraph 29 of decision XXVIII/2, of its intention to use the exemption for high-ambient-temperature parties and is listed in appendix II of decision XXVIII/2, please use data form 7 to report quantities of new HFCs imported for use in approved subsectors as listed in annex I to the decision. Those imports must be for use within your country and not for export. In case other subsectors are approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2, please use the additional columns in the data form to specify the approved subsectors and the amounts imported for use in those subsectors. Only bulk gases for servicing of equipment in the exempted subsectors should be reported here, not gases imported inside pre-charged equipment.

Section 2: Instruction VIII on data on production under the exemption for high-ambient-temperature parties (data form 8)

2.1 Very few countries listed in Appendix II of decision XXVIII/2 have production facilities for Annex F substances (HFCs). If your country formally notified the Secretariat, as specified under paragraph 29 of decision XXVIII/2, of its intention to use the exemption for high-ambient-temperature parties and is listed in Appendix II of decision XXVIII/2, please use data form 8 to report quantities of HFC produced for use in approved subsectors as listed in annex I to the decision. That production must be for use within your country and not for export. In case other subsectors are approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2, please use the additional columns in the data form to specify the approved subsectors and the amounts produced for use in those subsectors.

Data form 7 on consumption (imports) under the exemption for high-ambient-temperature parties

1. Fill in this form only if your country is listed in Appendix II to decision XXVIII/2, has formally notified the Secretariat of its intention to use the high-ambient-temperature exemption, and imported HFCs for its own use in the subsectors contained in Appendix I to decision XXVIII/2.

Party _____

DATA FORM 7 — **HAT_Dataform/2018**

DATA ON IMPORTS OF ANNEX F SUBSTANCES FOR EXEMPTED SUBSECTORS

in tonnes[1] (not ODP or CO_2-equivalent tonnes)

Period: January - December 20___

(1) *Annex group*	*(2)* *Substance*	*Quantity of new substances imported for approved subsectors to which the high-ambient-temperature exemption applies (columns to be added as required for other subsectors that may be approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2)**				
		(3) *New imports for use in multi-split air conditioners*	*(4)* *New imports for use in split ducted air conditioners*	*(5)* *New imports for use in ducted commercial packaged (self-contained) air conditioners*	*(6)* *New imports for use in subsector***	*(7)* *New imports for use in subsector***
F-Group I	HFC-32 (CH_2F_2)					
	HFC-41 (CH_3F)					
	HFC-125 (CHF_2CF_3)					
	HFC-134 (CHF_2CHF_2)					
	HFC-134a (CH_2FCF_3)					
	HFC-143 (CH_2FCHF_2)					
	HFC-143a (CH_3CF_3)					
	HFC-152 (CH_2FCH_2F)					
	HFC-152a (CH_3CHF_2)					
	HFC-227ea (CF_3CHFCF_3)					
	HFC-236cb ($CH_2FCF_2CF_3$)					
	HFC-236ea (CHF_2CHFCF_3)					
	HFC-236fa ($CF_3CH_2CF_3$)					
	HFC-245ca ($CH_2FCF_2CHF_2$)					
	HFC-245fa ($CHF_2CH_2CF_3$)					
	HFC-365mfc ($CF_3CH_2CF_2CH_3$)					
	HFC-43-10mee ($CF_3CHFCHFCF_2CF_3$)					
F-Group II	HFC-23 (CHF_3)					
Mixtures and blends containing controlled substance(s) — applicable to all substances, not just HFCs (add additional rows or pages as required for blends not listed below)						
R-404A (HFC-125 = 44%, HFC-134a = 4%, HFC-143a = 52%)						
R-407A (HFC-32 = 20%, HFC-125 = 40%, HFC-143a = 40%)						
R-407C (HFC-32 = 23%, HFC-125 = 25%, HFC-143a = 52%)						
R-410A (HFC-32 = 50%, HFC-125 = 50%)						

(1) *Annex group*	(2) *Substance*	*Quantity of new substances imported for approved subsectors to which the high-ambient-temperature exemption applies (columns to be added as required for other subsectors that may be approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2)*•				
		(3) *New imports for use in multi-split air conditioners*	(4) *New imports for use in split ducted air conditioners*	(5) *New imports for use in ducted commercial packaged (self-contained) air conditioners*	(6) *New imports for use in subsector*••	(7) *New imports for use in subsector*••
R-507A (HFC-125 = 50%, HFC-143a = 50%)						
R-508B (HFC-23 = 46%, PFC-116 = 54%)						
Comments						

[1] Tonne = Metric ton.

Note: If a non-standard blend not listed in section 11 of the data reporting instructions and guidelines is to be reported, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported in the "comments" box above.

• Only bulk gases for servicing of exempted equipment should be reported here, not gases imported inside pre-charged equipment.

•• For each substance imported for use in subsectors that may be approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2, please specify the approved subsector. Should the column space be insufficient, further information can be provided in the "comments" box above.

Data form 8 on production under the exemption for high-ambient-temperature parties

1. Fill in this form only if your country is listed in appendix II to decision XXVIII/2, has formally notified the Secretariat of its intention to use the high-ambient-temperature exemption, and produced HFCs for its own use in the subsectors contained in appendix I to decision XXVIII/2.

Party: _____

DATA FORM 8 **HAT_Dataform/2018**

DATA ON PRODUCTION OF ANNEX F SUBSTANCES FOR EXEMPTED SUBSECTORS

in tonnes[1] (not ODP or CO_2-equivalent tonnes)

Period: January - December 20____

(1) *Annex group*	(2) *Substance*	Quantity of new substances *produced for approved subsectors to which the high-ambient-temperature exemption applies (production should be for use within the producing country) (columns to be added as required for other sub-sectors that may be approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2)**				
		(3) *New production for use in multi-split air conditioners*	(4) *New production for use in split ducted air conditioners*	(5) *New production for use in ducted commercial packaged (self-contained) air conditioners*	(6) *New production for use in subsector**	(7) *New production for use in subsector**
F-Group I	HFC-32 (CH_2F_2)					
	HFC-41 (CH_3F)					
	HFC-125 (CHF_2CF_3)					
	HFC-134 (CHF_2CHF_2)					
	HFC-134a (CH_2FCF_3)					
	HFC-143 (CH_2FCHF_2)					
	HFC-143a (CH_3CF_3)					
	HFC-152 (CH_2FCH_2F)					
	HFC-152a (CH_3CHF_2)					
	HFC-227ea (CF_3CHFCF_3)					
	HFC-236cb ($CH_2FCF_2CF_3$)					
	HFC-236ea (CHF_2CHFCF_3)					
	HFC-236fa ($CF_3CH_2CF_3$)					
	HFC-245ca ($CH_2FCF_2CHF_2$)					
	HFC-245fa ($CHF_2CH_2CF_3$)					
	HFC-365mfc ($CF_3CH_2CF_2CH_3$)					
	HFC-43-10mee ($CF_3CHFCHFCF_2CF_3$)					
F-Group II	HFC-23 (CHF_3)					

Comments:

[1] Tonne = Metric ton.

* For each substance produced for use in subsectors that may be approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2, please specify the approved subsector. Should the column space be insufficient, further information can be provided in the "comments" box above.